

macropterous. The caudate condition is extremely rare in *G. pennsylvanicus*, common in *G. abbreviatus*, is found in 4 out of the 5 specimens seen of *G. assimilis*, 5 out of 9 of *G. personatus*, 27 out of 31 (and so nearly universal) in *G. integer*, 1 out of 9 in *G. vocalis*,

2 out of 7 in *G. armatus*, and 6 out of 16 in *G. firmus*. In general it appears to be rather more common in females than in males.

The crickets retreat, figured in Harper's Magazine, Vol. 93, p. 693, in probably that of *G. abbreviatus*.

A NEW SPECIES OF THE GENUS SAISSETIA (COCCIDAE).

With notes on some of the species of the genus not well understood.

BY GEORGE B. KING, LAWRENCE, MASS.

SAISSETIA NIGRELLA n. sp.

♀ Scale black 3 mm. long, 2½ wide, 2 high very convex, shiny surface smooth marginally carinated, texture thick. Of the 20 specimens examined all showed and 8 segmentes antenna; variable however, as follows:

Segment 1-2-3-4-5-6-7-8 in μ
 46-44-48-40-44-24-24-52
 46-48-60-48-40-24-24-52
 46-48-52-36-40-24-24-52
 44-44-48-40-44-24-24-52

Hind leg: coxa 100; femur with trochanter 160; tibia 104; tarsus 80. Marginal spines, club-shaped with split tips $36 \times 24 \mu$ long. Digitules of claw 24μ long with large dilated end. The derm is yellowish brown with irregular oval gland orifices, no irregular plates forming a marquetry pattern as in *S. depressa* and *S. nigra*, but the skin seems to be without tessellation.

Hab.— On *Ficus* sp. at Tongaar, Natal, South Africa (Fuller No. 7).

The above species were sent to Prof. Cockerell by Mr. Fuller with several other species of Coccidae. Being the

only species of *Saissetia* sent, Prof. Cockerell turned it over to me for study. I wish to say however that it is a very hard species to clear for study, owing to its thick tough skin, which resists the action of caustic potash after prolonged boiling. Superficially it resembles *S. nigra* but differs from that species by being very much smaller, structurally by the derm not having the marquetry pattern with oval gland pits enclosed.

SAISSETIA NIGRA.

Lecanium nigrum Nietner 1861.

SAISSETIA DEPRESSA.

Lecanium depressum Targioni 1867.

The above two species seem to be decidedly mixed, both being considered by some coccidologists as one species, while others believe *depressa* to be a variety of *nigra*. Mr. Maskell, Trans. N. Z. Inst. 1893, believed *nigra*, *depressa* and *begoniae* (I have not seen *begoniae*)

to be identical. The confusion seems to have arisen from the extremely close resemblance of the polygonal glands of the derm in each of the species, and from not properly studying the scales superficially as in them are found characters which are certainly specific. Furthermore it appears, and the more I read the literature upon the species the more I am convinced, that in most cases the scales sent to the specialists were *nigra* and not *depressa* as supposed by the sender. The writer has had *nigra* sent him for *depressa* and vice versa; of course

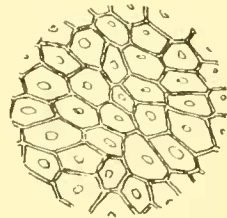
Dr. Howard and *S. nigra* from Mr. Pergande. The distinctive character of each species is as follows.

S. nigra. ♀ Scale very dark brown, approaching black. The entire outer margin carinate, distinctly so anteriorly and posteriorly, marginally not so pronounced. Texture very thick, shiny, smooth. Elongate oval 4 mm. long, 3 broad, 2 high.

S. depressa. ♀ Scale, deep red brown, not at all blackish, somewhat shiny. General outline oval, flat, much narrower in front than behind. Surface rugose, pitted and the margin distinctly ribbed; about the center of the dorsum posteriorly is a slight but distinct



Saissetia nigra.



Saissetia depressa.

Markings of the derm.

this was misidentification where proper study was not made. Recently I received *nigra* on *Anona reticulata* from Grenada, W. I., and a species on *Coleus* at Barbadoes, W. I., marked new var., of *nigra*, collected and kindly sent to me by Mr. H. Maxwell Lefroy, the imperial entomologist; he says the same variety is found on wild Agave. The supposed variety is clearly *S. depressa*. I have also perfect examples of *S. depressa*, on wild "Almond" (*Terminalia*) from San Juan, Porto Rico, collected by Mr. Busck, U. S. Dept. of Agriculture, kindly sent to me through

depression. Marginal carina nearly obsolete. Texture of the scale decidedly thinner than in *S. nigra*. Size 3 mm. long, 2½ broad, 1 high. As to the microscopical characters, there are slight differences. The derm of *depressa* is more transparent. The lines forming the polygonal structure in *depressa* are narrower more sharpened edges. In *nigra* they seem to be thicker and flattened. The antennae of each are similar and quite difficult to measure correctly owing to the markings of the skin.

SAISSETIA HEMISPHERICA.

Lecanium hemisphaericum Targ.-Tozz.
1867.

The ♀ scale is smooth elongate oval $4\frac{1}{2}$ to 5 mm. long; 2 to 3 broad, and 2 high. Color variable, reddish brown, yellowish brown to a tinge of greenish brown, rounded dorsally without ridges forming an H though this character is found in the immature individuals. Antennae 8-jointed measuring in μ joint 1(56), 2(60), 3(84), 4(52) 6(36) 7(28) 8(56), joint 1 has one hair, 2, two; 3, three; 4 three; 5 two; 6 one; 7 two and 8 eight. Front leg: coxa 120 long; femur with trochanter 240; tibia 168; tarsus 88. Tarsal digitule 56 long. The outer margin of the skin after treatment with potash is much darker than the rest, and the entire surface tessellated, and thickly covered with oval gland orifices.

SAISSETIA FILICUM.

Lecanium filicum Boisd. 1868.

♀ Scale yellowish red brown to red brown, practically hemispherical, though some examples found at the ends of the small twigs and leaves of the food plants are somewhat elongate. The adult ♀ scale and young having one longitudinal and two transverse ridges forming a raised H marginally distinctly keeled. The longitudinal ridge has 4 minute raised round tubercles, and the entire scale more or less minutely pitted, surface somewhat shiny. Size 3 mm. in diameter and 2 mm. high.

Antennae 8-jointed in μ long 1(52) 2(48) 3(56) 4(44) 5(20) 6(24) 7(28) 8(40). Front leg: coxa 120; femur with trochanter 200; tibia 152; tarsus 88. The skin marginally dark ochereous thickly covered with large oval

gland orifices. The center and large portion of the skin colorless with the gland pits very indistinct.

It seems to the writer that the names of the above two species are misplaced. *S. filicum* should be called *S. hemisphaerica* and the latter *S. filicum*, owing to the fact of *S. filicum* as it now stands is a hemispherical shaped species, while *S. hemisphaerica* is an elongate oval one. Indeed it seems as though *S. filicum* was the one originally described as *L. hemisphaericum*. The marginal hairs of the four above species are all very similar with expanded ends which are more or less split interspersed with ordinary sharp spines without expanded ends or split. The lateral incisions of all are also of the same shape similar to a half oval.

Saissetia hemisphaerica was received from Prof. Cockerell, collected by him Aug., 1901, at La Galla, San Diego county, Calif., on pepper tree (*Schinus molle*), on *Cycas circinalis*, Trinidad (West Indies) from Dr. L. Reh, and on fern in greenhouses in Mass. Those of *S. filicum* were from ferns in greenhouses, Lawrence, Mass. collected by myself.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—XXIX.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Epelis truncataria Walker.

Egg. Elliptical, strongly flattened-concave, one end neatly truncate, the other slight-

ly depressed; shining pinkish gray, slightly iridescent. Reticulations strong, sharp, regularly hexagonal, resembling honey-comb at